USSN 09/401,730
Group Art Unit: 2878
Docket No. 161-P-DAL035BUS01

REMARKS

Objection to the Drawings

The drawings have been objected to under 37 CFR § 1.83(a) for failing to show every feature of the invention as specified in the claims. Accordingly, Figures 6 and 7 have been added to more clearly illustrate the coaxial alignment and out of alignment features described in the specification and previously added to the claims. The specification has been amended in the Brief Description of the Drawings section to refer to the new figures and briefly in the Detailed Description section to refer to the new figures.

Rejections over Komatsu '723

Claims 1 – 4, 18 and 23 – 25 have been rejected under 35 USC § 102(b) and claim 4 has been rejected under 35 USC § 103 over Komatsu. These rejections, over the claims as currently amended, are respectfully traversed.

Claims 1, 18 and 23 have been amended to add the limitation that the fiber is brought "into contact" with the photo-element, so that the externally visible transparent region is a "contact coupling" one. Support for this amendment can be found in the specification, for example on page 7, at lines 20 – 24. No new matter has been added.

Komatsu discloses a securing device for releasably connecting an optical fiber 12 to an optical module 16 (light receiving or emitting means). The device comprises a receptacle body 11, that may be entirely made of a transparent plastic material having a substantially equal refractive index to that of the optical fiber 12. The receptacle body 11 has, at a front face, a bottomed bore or blind hole 14 to receive and secure an end of a ferule 13 at the end of a fiber 12. A circular recess 17 for receiving and securing the optical module 16 is formed on the rear face of the receptacle body 11. Thus, the blind hole 14 and the recess 17 are separated by bottom portion 15 (column 4, lines 9 – 22).

The inner bottom face 21 of blind hole 14 of Komatsu is flat and normal to the axis of the blind hole, so that the fiber 12 is contacted directly with the bottom face 21

(column 4, line 42). By virtue of this and of the same refractive index, reflection of light at the interface between the inner bottom face 21 of the blind hole and the end face of the fiber 12 is avoided. Furthermore, the rear face 22 of bottom portion 15 (inner bottom face of recess 17) is inclined with respect to the axis of the blind hole in order to avoid refraction of light at the rear face 22 (paragraph bridging columns 4-5, background and summary of invention).

Thus, it can be seen in Komatsu that the fiber is not in contact with the photo-element as now required by independent claims 1, 18 and 23.

In the claims of the present invention, as presently amended, the transparency of the securing device makes the contact coupling region visible and enabling the ability to check whether the fibers enter the holes 25 without obstruction and whether they are positioned correctly with respect to the photo-elements (page 7, lines 23 - 27), in contact with them, thus helping the assembling step.

In contrast in Komatsu, the transparency is used to allow for an efficient optical indirect or contactless coupling. In such an indirect or contactless coupling, a special geometry and proper selection of the refractive index avoid the problem of potentially damaging reflection of light onto the photo-element or the fiber.

The present claims are directed to a contact coupling, where the "optical" problems solved by Komatsu do not arise. A person of ordinary skill in the art attempting to solve the problem of the present invention would not look at Komatsu who solves an entirely different problem.

Further, Komatsu has no suggestion to provide for external visibility. Note that in the embodiments of Figs. 3 and 4, the contactless coupling region of bottom portion 15 is hidden by members 42, 53 that are not said to be transparent. In other words, the present claims solve the "optical" problems addressed by Komatsu by providing a contact coupling, that has also the advantage of being simpler and more easily manufactured and assembled because it avoids interposed elements between the fiber and the photo-element.

Thus, independent claims 1, 18 and 23, as amended, are not anticipated by nor rendered obvious in view of Komatsu. The remainder of the rejected claims are dependent on one of these independent claims and, thus, can not be anticipated nor rendered obvious by Komatsu.

Claims 1 – 4, 18 and 23 – 25 should now be allowable over Komatsu.

Rejection over Yamada et al '625

Claims 5 – 7, 8 – 11 and 22 have been rejected under 35 USC § 102(b) and claim 12 has been rejected under 35 USC § 103 over Yamada et al. These rejections, over the claims as currently amended, are respectfully traversed.

Claim 5 has been amended to indicate that the axis passes through the "center of the semi-circular portion of the slot" for clarity and also has been amended to indicate that the "semi-circular portion" freely houses and "exerts a force on the fiber," also for clarity. Support for these amendments can be found in the specification. No new matter has been added.

With the amendments made to claim 5, it should now be clear that the axis of the slot passes through the center of the semi-circular portion of the slot. With an adequate definition of the location of the axis defined in the independent claim, it should be clear that claim 5 can not be anticipated nor rendered obvious by Yamada et al. The arguments presented in the amendment presented September 11, 2002 are repeated here by incorporation by reference.

In brief, (by making reference to the sketches provided with the amendment of September 11, 2002), that the "wide-mouth portion" can not be coaxial with the hole in the supporting element in a first position (Figure 4B) and out of alignment with the hole in the supporting element in a second position (Figure 4C) and exert "on the optical fibre a force which keeps the optical fibre secured in the hole."

Sketch A illustrates what is believed to be the Examiner's interpretation. It can be clearly seen in the sketch, taken from Figures 4B and 4C of Yamada et al, the "wide-mouth portion" of the slot (as interpreted by the Examiner) does NOT exert any pressure

whatsoever on the optical fibre and especially does NOT exert on the optical fibre a force which keeps the optical fibre secured in the hole. The "wide-mouth portion" of the slot is, in fact, out of contact with the fibre.

All of the independent claims rejected above require that the slot have a semi-circular portion whose axis not only moves from a first position coaxially aligned with the axis of the hole to a second position out of alignment but also "exert[s] a force on the optical fibre which keeps the optical fibre secured in the hole." It is clear from Sketch A that the "wide-mouth portion" not only is not semi-circular but fails to exert a force securing the optical fibre in the hole.

In Sketch B it can be seen that the force on the fibre in Yamada et al is actually exerted by the U-shaped portion of slot 22 when the slide of Yamada et al is in the second position (Figure 4C; column 5, lines 5-6). However, the U-shaped portion of slot 22 is coaxial with the hole 13 in the second position of the slide (Figure 4C) and is out of alignment therewith when the slide is in the first position (Figure 4B). Thus, the arrangement of Yamada et al (using the U-shaped portion of slot 22) is the exact opposite of the arrangement of the present invention in which the axis of the semi-circular portion of the slot is coaxial with the axis of the hole with the slide in the first position. The axis of the semi-circular portion of the slot is out of alignment with the axis of the hole when the slide is in the second position where a force is exerted on the fibre which keeps the fibre secured in the hole.

Yamada et al fails in any case to show or suggest a slide having a semi-circular portion which acts in accordance with the presently claimed invention.

Thus, claim 5 can not be anticipated by nor rendered obvious over or in view of Yamada et al. The remainder of the rejected claims, all depending from claim 5, also can not be anticipated by nor rendered obvious over or in view of Yamada et al.

Claims 5 – 7, 8 – 12 and 22 should now be allowable over Yamada et al.

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Summary

With the amendments made and the arguments presented and with the previously indicated allowable subject matter, claims 1 – 18 and 22 – 29 should now by allowable, this application should be in condition for allowance and a notice to that effect is earnestly solicited.

Respectfully Submitted,

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